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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/418,562	10/15/1999	JACOBUS C. HAARTSEN	040070-549	9055

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EXAMINER

ODOM, CURTIS B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/418,562	Applicant(s) HAARTSEN, JACOBUS C.	
	Examiner Curtis B. Odom	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10, 12-23, 25 and 27-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 16-23 and 35-46 is/are rejected.
- 7) ☒ Claim(s) 10, 12-15, 25 and 27-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/15/2005 have been fully considered but they are not persuasive. Applicant states that Bergstrom et al. (U. S. Patent No. 4, 716, 573) does not disclose "wherein a forbidden hop channel is mapped onto each of the allowable hop channels with equal probability. However, it is the understanding of the examiner that Bergstrom et al. does in fact disclose the above limitation. Bergstrom et al. discloses (column 5, lines 49-column 6, line 28) forbidden hop channels (fx) are mapped onto substitute allowable hop channels (second frequency) based on a status value. Bergstorm et al. further discloses this second (new) frequency is chosen from a matrix using a random number to select a substitute (allowable) hopping frequency (column 3, lines 30-35). Thus, since the substitute (allowable) hop channel is chosen randomly, then all hop channels have an equal probability of being randomly chosen. Thus, it is the understanding of the examiner that since the forbidden hop channels are mapped to a new hop channels randomly, that forbidden hop channels are mapped onto each of the new hop channels with equal probability.

Applicant also states that Bergstrom does not disclose a set of forbidden channels and a remaining set of allowable hop channels. Although Bergstrom et al. does disclose prohibiting frequencies being made permissible, Bergstrom et al. clearly states the matrix of frequencies contains forbidden (prohibited) hop channels and allowable (permitting) hop channels based on

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the status (quality) value (see Fig. 2, column 2, line 63-column 3, line 4, and column 5, line 49-column 6, line 28).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 16-23, and 35-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergstrom et al. (previously cited in Office Action 11/10/03)

Regarding claim 1, Bergstrom et al. discloses a method of selecting a hop channel for use in a channel hopping communication system that communicates over a physical channel includes a sequence of hop channels, comprising a set of forbidden hop channels and a remaining set of allowable hop channels (column 2, lines 62-65), wherein the channels with interference are forbidden hop channels, the method comprising:

selecting (column 2, lines 4-16) a hop channel from the sequence as a function of a present phase; and

if the selected hop channel belongs to a set of forbidden hop channel then using a time-varying parameter to select, at the present phase, a substitute hop channel from the set of allowable channels (column 3, lines 13-65 and column 5, line 49-column 6, line 28, see also

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Response to Arguments above), wherein the time-varying parameter (random number) is independent of conditions on the physical channel and a determination as to the selection of a hop channel as the substitute hop channel from the set of allowable hop channels is made each time the selected hop channel belongs to the set of forbidden hop channels, wherein a forbidden hop channel is mapped onto each of the allowable hop channels with equal probability (see above Response to Arguments and column 5, line 49-column 6, line 28), wherein each time f_x is a forbidden hop channel, a second (new) frequency is generated from the allowable hop channels (column 3, lines 13-65).

Bergstorm et al. does not disclose if the selected hop channel is an allowable hop channel, then using the selected hop channel for communication during the present phase and using the substitute hop channel for communication during the present phase

However, Bergstrom et al discloses that depending on a status value, the selected hop channel or the substitute hop channel would be used for transmission (column 2, lines 21-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that if the state value met a certain specification, then the selected hop channel would be an allowable hop channel and used for communication during a present phase, but if the status value did not meet a certain specification, then the substitute hop channel would be used for communication during the present phase.

Regarding claim 2, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter is a clock value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock value could

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have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 3, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter and the present phase are derived from the same clock value. However, it would have been obvious to one skilled in the art at the time the invention was made to derive the time-varying parameter and the present phase from the same clock value to eliminate phase offset from processes in the device.

Regarding claim 4, which inherits the limitations of claim 1, Bergstrom et al. further discloses the time-varying parameter is a randomly selected value (column 3, lines 13-65, random number).

Regarding claim 5, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter is a pseudo-randomly selected value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that since the time-varying parameter of Bergstrom et al. is a randomly selected value (column 3, lines 13-65) that the time-varying parameter could have been a pseudo-randomly selected value. Thus, the time-varying parameter being pseudo-randomly selected does not constitute patentability.

Regarding claim 6, which inherits the limitations of claim 1, Bergstrom et al. discloses at least one of the forbidden channels is associated with received interference from a jammer (column 2, lines 11-27).

Regarding claim 7, which inherits the limitations of claim 1, Bergstrom et al. discloses at least one of the forbidden hop channels is reserved for used by a communication system that is

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not the channel hopping communication system (column 1, lines 13-21, wherein the prohibited frequency is occupied by a jammer caused by a local TV station).

Regarding claim 8, which inherits the limitations of claim 1, Bergstrom et al. discloses dynamically determining the set of forbidden hop channels, whereby the set of the forbidden hop channels varies over time (column 2, lines 62-65 and column 3, lines 16-26).

Regarding claim 16, Bergstrom et al. discloses a hop channel selector (Fig. 4) for use in a channel hopping communication system that communicates over a physical channel and includes a sequence of hop channels, comprising a set of forbidden hop channels and a remaining set of allowable hop channels (column 2, lines 62-65), wherein the channels with interference are forbidden hop channels, the hop channel selector comprising:

logic configured to select (Fig. 4, column 2; lines 4-16) a hop channel from the sequence as a function of a present phase; and

logic configured to use a time-varying parameter to select, at the present phase, a substitute hop channel from the set of allowable hop channels (Fig. 4, column 2, lines 20-27 and column 3, lines 16-35), wherein the time-varying parameter (random number) is independent of conditions on the physical channel and a determination as to the selection of a hop channel as the substitute hop channel from the set of allowable hop channels is made each time the selected hop channel belongs to the set of forbidden hop channels wherein a forbidden hop channel is mapped onto each of the allowable hop channels with equal probability (see above Response to Arguments and column 5, line 49-column 6, line 28), wherein each time f_x is a forbidden hop channel, a second (new) frequency is generated from the allowable hop channels (column 3, lines 13-65).

Bergstrom et al. does not disclose logic configured to use the selected hop channel for communication during the present phase if the selected hop channel is an allowable hop channel and to use the substitute hop channel for communication during the present phase if the selected hop channel is not an allowable hop channel.

However, Bergstrom et al discloses that depending on a status value, the selected hop channel or the substitute hop channel would be used for transmission (column 2, lines 21-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that if the state value met a certain specification, then the selected hop channel would be an allowable hop channel and used for communication during a present phase, but if the status value did not meet a certain specification, then the substitute hop channel would be used for communication during the present phase.

Regarding claim 17, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter is a clock value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock value could have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 18, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter and the present phase are derived from the same clock value. However, it would have been obvious to one skilled in the art at the time the invention was made to derive the time-varying parameter and the present phase from the same clock value to eliminate phase offset from processes in the device.

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Regarding claim 19, which inherits the limitations of claim 16, Bergstrom et al. further discloses the time-varying parameter is a randomly selected value (column 3, lines 13-65, random number).

Regarding claim 20, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter is a pseudo-randomly selected value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that since the time-varying parameter of Bergstrom et al. is a randomly selected value (column 3, lines 13-65) that the time-varying parameter could have been a pseudo-randomly selected value. Thus, the time-varying parameter being pseudo-randomly selected does not constitute patentability.

Regarding claim 21, which inherits the limitations of claim 16, Bergstrom et al. discloses at least one of the forbidden channels is associated with received interference from a jammer (column 2, lines 11-27).

Regarding claim 22, which inherits the limitations of claim 16, Bergstrom et al. discloses at least one of the forbidden hop channels is reserved for used by a communication system that is not the channel hopping communication system (column 1, lines 13-21, wherein the prohibited frequency is occupied by a jammer caused by a local TV station).

Regarding claim 23, which inherits the limitations of claim 16, Bergstrom et al discloses dynamically determining the set of forbidden hop channels, whereby the set of the forbidden hop channels varies over time (column 2, lines 62-65 and column 3, lines 16-26).

Regarding claim 35, which inherits the limitations of claim 1, Bergstrom et al. discloses the substitute hop channel need not be the same as the previously selected substitute channel for

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the forbidden hop channel (column 3, lines 16-35), wherein the substitute channel is generated randomly.

Regarding claim 36, which inherits the limitations of claim 1, Bergstrom et al. does not disclose the time-varying parameter is a based on system clock. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock could have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 37, which inherits the limitations of claim 16, Bergstrom et al. discloses the substitute hop channel need not be the same as the previously selected substitute channel for the forbidden hop channel (column 3, lines 16-35), wherein the substitute channel is generated randomly.

Regarding claim 38, which inherits the limitations of claim 16, Bergstrom et al. does not disclose the time-varying parameter is a based on system clock. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the clock could have been used to create a random number value. Thus, using a clock signal as the time-varying parameter is deemed a design choice and does not constitute patentability.

Regarding claim 39, which inherits the limitations of claim 16, Bergstrom et al. discloses the substitute hop channel is selected on a dynamic basis (column 3, lines 16-35 and column 5, line 49-column 6, line 28).

Regarding claim 40, which inherits the limitations of claim 16, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the hop channel (column 2, line 54-column 3, line 35, permitting frequencies).

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Regarding claim 41, which inherits the limitations of claim 16, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 42, which inherits the limitations of claim 40, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 43, which inherits the limitations of claim 1, Bergstrom et al. discloses the substitute hop channel is selected in a dynamic manner (column 3, lines 16-35 and column 5, line 49-column 6, line 28).

Regarding claim 44, which inherits the limitations of claim 11, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the hop channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 45, which inherits the limitations of claim 1, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 46, which inherits the limitations of claim 44, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Allowable Subject Matter

5. Claims 10, 12-15, 25, and 27-34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
February 2, 2006



CHIEH M. FAN
SUPERVISORY PATENT EXAMINER